NOTES.

A photogravure of Sir Joseph Lister, President of the Royal Society, accompanied by a biographical sketch, will appear in next week's Nature, as an addition to the series of "Scientific Worthies."

The "James Forrest" lecture of the Institution of Civil Engineers will be delivered on Thursday, May 7, by Dr. A. B. W. Kennedy, F.R.S., the subject being "Physical Experiment in relation to Engineering."

Prof. Ehrlich has been appointed Director of the new State Institute in Berlin for the testing of therapeutic serum.

The Trustees of the late Earl of Moray have granted a donation of £1875 to the Ben Nevis Observatory.

The Bill before the House of Representatives adopting the metric system of weights and measures as legal standards in the United States, has (says *Science*) been referred back to the Committee. The Bill was ordered to a third reading by a vote of 119 to 116, but this vote was afterwards reconsidered.

Dr. J. E. Aitcheson, C.I.E., the naturalist who was attached to the Afghan Delimitation Commission, has returned to London from North-West India and Kashmir, where for the past four years he has been continuing the further investigation of the fauna and flora of those regions.

We regret to announce that Prof. Dr. Adalbert Krueger, Director of the Kiel Observatory, died on Tuesday, April 21. He was in his sixty-fourth year.

The deaths are announced of M. Joaquim P. N. da Silva, distinguished for his archæological works, at Lisbon, in his ninetieth year; M. Jules Lefort, Member of the Paris Academy of Medicine, and the author of many treatises on pure and applied chemistry and pharmacy, his most important work being in connection with water analysis; Prof. Dr. Ofterdinger, at one time Professor of Mathematics and Astronomy in Tübingen University; and M. J. B. Dureau, the founder, in 1860, of the *Journal des fabricants de sucre.* M. Dureau was also the author of a "Rapport sur l'Industrie de sucre à l'Exposition universelle de 1867," and of a valuable work entitled "l'Industrie du sucre depuis 1860."

We learn from *Terrestrial Magnetism* that M. Moureaux has been entrusted by the Minister of Public Instruction, at the request of the Imperial Russian Geographical Society, with the investigation of a pronounced anomaly in the distribution of terrestrial magnetism, which certain observations have revealed in Southern Russia.

Arrangements are being made in Limoges to celebrate this year the centenary of the introduction of porcelain into France, by means of an Exposition, in which the history of porcelain manufacture will be traced by specimens of work and processes. The Exposition is being organised by the Société Gay-Lussac, working in conjunction with representatives of the town of Limoges.

On Tuesday next, May 5, Mr. C. V. Boys, F.R.S., will begin a course of lectures at the Royal Institution, on "Ripples in Air and on Water"; and on Thursday, May 7, Mr. W. Gowland, late of the Imperial Japanese Mint, will begin a course of lectures on "The Art of Working Metals in Japan." The Friday evening discourse on May 8 will be delivered by Prof. Silvanus P. Thompson, F.R.S., his subject being "Electric Shadows and Luminescence." That on May 15 will be on "Cable Laying on the Amazon River," Mr. Alexander Siemens being the lecturer.

We learn from *Science* that Mr. William I. Hornaday, formerly of the U.S. National Museum, has been appointed Director of the proposed Zoological Park in New York. He enters upon his duties immediately, and will first consider and report to the Executive Committee upon the difficult question of location of the Park. At the last meeting of the Society the three first honorary members were elected as follows: Sir William H. Flower, Prof. Alexander Agassiz, and Prof. J. A. Allen.

Our American correspondent writes under date April 17:—"Prof. Frederick A. Starr, of the University of Chicago, has just returned from a three months' tour in Central America. He found many genuine dwarfs, but not constituting a tribe, as they spoke nineteen languages in Oaxaca, thirteen in Chiapas, and twenty-one in Guatemala, indicating a lack of unity among them.

"The new remedy for consumption, aseptolin, the formula for which has recently been given to the world by Dr. Cyrus Edson, is now used in the New York State's prisons at Sing Sing, Dannemora, and Auburn, with marked success. At the last-named prison there was not one death from consumption during the entire month of March, which is quite unprecedented. Twenty thousand cases are under treatment, the larger number being outside the prisons, with two hundred cures reported.

"It is remarkable that with the abundant sea-life teeming about it, and within short distances, New York City has never possessed an aquarium. Castle Garden has now been converted to that use, and will be opened to the public within a few weeks with admirable equipment. It is peculiarly fortunate that the underlying strata are such as to filter the water from the adjoining harbour, thus providing an inexhaustible supply of pure sea-water for the tanks from an artesian well.

"The extraordinary weather, perhaps, deserves another note. While snow-storms still prevail at the West, and three feet of snow, being the heaviest snow-fall in many years, was reported on Monday from New Mexico, unprecedented heat has prevailed along the North Atlantic seaboard for five days, the thermometer reaching 85° at New York City on the 16th, and again to-day, which exceeded by 14° all previous records of same date, and was hotter than any April weather previously recorded. From other points still higher temperatures were reported: 90° at Hartford, Conn., and Moonsocket, R.I.; 92° at Manchester, N.H., and 94° at Middletown, N.Y."

The summer meetings of the Institution of Naval Architects will be held this year in Hamburg, on Monday, June 8, and the following day. On Wednesday, June 10, the meetings will be transferred to Berlin, on the invitation of the Imperial German Government, and they will be continued there during the remainder of the week. Full particulars of the papers to be read, of the works and places of interest to be visited, and of the excursions and entertainments which are being organised, will shortly be issued. The meetings are receiving the warmest support from the Imperial Government, under whose direction the arrangements in Berlin are being prepared.

On July 2 the Second International Congress of Applied Chemistry will open in Paris. In addition to strictly technical questions, the congress will discuss the analytical processes needed for the guidance of manufacturers and the benefit of the consumer. The proceedings will be conducted in ten sections, and, judging from the number and interest of the questions which will be brought up in each, there will be no lack of work. The sections represent such diverse subjects as chemical products, electro-chemistry, colouring matters and dyeing, pharmaceutical products, metallurgy and mining, sugar-refining, vintnery, brewing, distilling, agricultural chemistry, photography, alimentation, and milk-supply. The Association des Chemistes de Sucerie et de Distillerie, which is organising the congress, has formed a omm comprising several members of the French Government, a large number of members of the Institute, and many of the foremost men in science and industry in France. Further information with reference to the congress can be obtained from M. Dupont, 156 boulevard Magenta, Paris.

THE Marine Biological Laboratory at Plymouth has been the scene of more than usual activity during the past month. In addition to the permanent staff of the laboratory, five botanists and zoologists have been engaged in biological research, and the students' laboratory, recently equipped for the accommodation of vacation parties, has had its resources taxed to the uttermost. Fifteen students in all—six from Cambridge, five from Oxford, three from the Owens College, Manchester, and one from University College, London—have formed Mr. Garstang's vacation class, and have made full use of the liberal provision made for them by the Director of the laboratory and his staff. The arrangements for the class have consisted of daily expeditions for trawling, dredging, tow-netting, and shore-collecting purposes to various parts of the neighbourhood, and of daily lectures and demonstrations on the results of the expeditions, and on general topics connected with marine biology. Especial attention has been paid to the life-histories of animals—to their bionomical relations and to problems of use and function—so as to comprise a body of instruction supplementary to the morphological studies of university laboratories. The class has admittedly been a great success, and the students have returned to their various universities not only with a store of new facts, but with renewed interest in biological pursuits. A similar class will be formed for August next. The *Busy Bee*, the new steamboat of the Association, has satisfactorily fulfilled all the tests imposed upon her, and proves to be eminently suitable for the routine work of the laboratory. Among the more interesting of recent captures may be mentioned the discovery of several examples of a species of the Amphineuran *Proneomenia*.

THE annual general meeting of the British Ornithologists' Union was held at 3 Hanover Square, on the 22nd inst. In the absence of Lord Lilford, the President, Mr. P. L. Sclater, F.R.S., took the chair. The report of the Committee stated that *The Ibis* (the journal of the Society) had been regularly published during the preceding year, and that the Union consisted of 269 ordinary members, besides honorary and foreign members. Twenty-nine new ordinary members and one new foreign member, were proposed and elected. Mr. Sclater brought forward a scheme for a new synopsis of the described species of birds, to be arranged in six volumes, corresponding with the six zoological regions of the earth's surface. This was referred to a Committee to report upon.

WE have received a copy of the draft programme of questions proposed for discussion at the International Meteorological Conference to be held in Paris in September next. Numerous questions in general meteorology, terrestrial electricity and magnetism, and international meteorology are down for discussion. Among these questions and propositions we notice that Dr. P. Schreiber (Chemnitz) will propose that the meteorological day shall be reckoned from 9 p.m. to 9 p.m., and designated by the same number as the civil day, while meteorological extremes and sums, *e.g.* of rain fallen, shall be measured at 9 p.m. Prof. Willis L. Moore (Washington) will put forward the solar magnetic period 26·67928 days as the natural mode of classifying solar, physical, and terrestrial meteorological phenomena, and suggest the desirability of its introduction for general use in the year 1901. The Royal Meteorological Society suggests (1) the desirability of more extended observations on infiltration into the soil, and uniformity in the same; (2) the general adoption of a standard anemometer for the determination of the velocity of the wind; (3) the general adoption of a uniform system of exposure for anemometers; (4) uniformity of conditions under which earth temperatures should be taken. Prof. H. Mohn (Christiania) will introduce the question of determining the pressure of the air by means of the observation of the boiling point of water (the hypsometer) with the accuracy necessary for meteorological purposes; and also that of the determination of the gravity correction for mercurial barometers by simultaneous observations of the hypsometer and the mercurial barometer. Dr. Billwiller (Zürich) will urge the necessity for the introduction of a uniform method of reduction of barometer readings to the sea-level for the construction of synoptic weather charts. Rev. Father Faura, S.J. (Manilla), will suggest that the time has arrived to settle the question of air motion in cyclones, and to finally disprove the theory of descending currents in these phenomena. Prof. E. Mascart (Paris) will treat of atmospheric electricity and terrestrial magnetism. Prof. von Bezold (Berlin), and Prof. Eschenhagen (Potsdam) will propose that certain general principles should be introduced for the publication of magnetic observations, and should be laid down for magnetic surveys. They will also suggest that it is desirable that all institutes which publish magnetic charts should give additional tables containing the magnetic elements, and, if possible, also the components for convenient points of intersection of the geographical co-ordinates. Other questions which they suggest for discussion are the distribution of magnetic observatories, and simultaneous international observations.

THE last published Report of the Central Physical Observatory of St. Petersburg gives particulars of the working of the vast and important meteorological service in Russia, and is the last summary which will be prepared under the efficient superintendence of Prof. H. Wild, who has now retired from the directorship. The number of stations returning regular observations amounted to 642, of which 438 were in Europe, and the remainder in extra-European localities. Before publishing these observations, they have been subjected to careful revision, *inter se*, and to comparison with synoptic weather charts. Storm-warning telegrams have been regularly issued to the Baltic and Black Seas, as well as to some inland seas, for which a success of 72 to 78 per cent. is claimed. Special attention is also paid to daily weather forecasts; the results are published for each separate element and for each month, the aggregate success being over 74 per cent. Special forecasts of wind and snow-storms are also issued to the railway companies. The report contains a long list of scientific investigations published under the auspices of the St. Petersburg Academy of Science.

WATER-CRESS is eaten by Caddis-worms, Caddis-worms by trout, and trout by Herons. The result of disturbing this balance of nature in a particular case is described by Miss E. A. Ormerod in the Cirencester *Agricultural Students' Gazette*. Three-quarters of a large crop of water-cresses were found to have been injured by the attacks of the water-grubs which are so well known as Caddis-worms. Isaac Walton gives evidence of the love of trout for Caddis-flies as baits, and this points strongly to their knowledge of the goodness of the larvæ for food in more natural circumstances. But in the case which Miss Ormerod investigated, the trout had been eaten by Herons. and by their removal the water-cress grower appears to have lost very helpful friends. The sequence of events consequent on local encouragement (beyond what is known as a natura balance) of one large species of birds of special habits, downwar through destruction of insect-eating fishes, and overplus of vegetable-eating insects, to the great pecuniary loss of the grower of water-cress, deserves a place with Darwin's story of the relation between cats and clover.

Dr. Gregg Wilson describes several peculiar cases of hereditary polydactylism, showing considerable variation in the position of the abnormality, in the *Journal of Anatomy and Physiology*. In one family, extra fingers or toes were so common that they were almost expected to appear upon some of the children. This abnormality persisted through six generations, and two interesting features connected with it are that it increased in the first four generations, and changed in position from the post-axial to the pre-axial side of the limb. In another case there was an increase of the abnormality, and also a change in the position from the post-axial to the pre-axial side of the limb. In a third case there was remarkable variability in the abnormality, a man with extra minimi on both feet having one son with extra great toes, and another son with extra minimi on the hands and a double middle toe on one foot. The instances studied by Dr. Wilson illustrate the variability of digital abnormalities, and in this regard they differ from the majority of cases of hereditary polydactylism, where the abnormality is very constant in position through several generations, though not in degree. In a few cases the abnormality has been found to pass in successive generations from the outer side of the hand to the outer side of the foot, and *vice versa*, but it is rare that i passes from one side of a limb to the other, as in the five cases sketched by Dr. Wilson.

On April 13 a meteorite, weighing two kilogrammes, fell at Lesves, near Namur, Belgium. In its fall it very nearly killed a young man who was working in an orchard, and it embedded itself into the earth to a depth of 50 centimetres. The Abbé Renard, who examined the specimen, considers it to be a stony meteorite of chondritic structure. It consists of a whitish crystalline paste, from which are detached meteoric iron, troïlite, olivine, bronzite, and chondroi. An examination of the structure and the chemical composition of this aerolite is now being made in the laboratory of the University of Gand.

The publication of Herr Gätke's theory of the moult in birds, in his work on Heligoland, seems to have induced other ornithologists, both in Europe and America, to turn their attention to this difficult subject. Mr. Witmer Stone has put forward his views "on the moulting of birds," in a communication made to the Academy of Natural Sciences of Philadelphia in January last. He has come to the conclusion that the annual moult at the close of the breeding season is a physiological necessity, and is common to all birds; whereas the spring moult and striking changes of plumage effected by abrasion are not physiological necessities, but depend in extent upon the height of development of colouration in the adult plumage, and do not necessarily bear any relation to the systematic position of the species. Mr. Stone scouts the idea of Gätke (adopted by Dr. Bowdler Sharpe) that feathers can actually change their colour without moult, unless it be by abrasion or bleaching. Mr. Stone gives us a large number of useful notes on the smaller land-birds of Eastern North America, based on his own observations.

A paper in the current number of the *Annales de Chimie et de Physique* gives the results of some recent determinations of the specific heat of boron, made by MM. Moissan and Gautier. Amorphous boron was used, and the specific heat measured by means of Bunsen's ice calorimeter. The boron was heated to three temperatures: 100°, 180°, and 230° C. The values for the atomic heat obtained at 50°, 146°, and 213° are 3·374, 4·153, and 4·766. By interpolation it is found that at a temperature of about 400° C. the atomic heat of boron would be 6·4, but the authors have made no attempts to make measurements at temperatures over 230°.

Since it has been shown that the velocity of propagation of an electro-magnetic disturbance in a dielectric is the same as that in a wire surrounded by the dielectric, the measurement of the velocity of such a disturbance in a wire is of great interest. M. Blondlot, who has already published the results of some experiments made on this subject, contributes an interesting paper to the current number of the *Annales de Chemie et de Physique*, giving the results of some recent experiments on the velocity of propagation of an electro-magnetic disturbance along a wire. The author employs the discharge between the outer coatings of two small Leyden jars (the "impulsive discharge" of Lodge), which occurs when a spark passes between the knobs connected to the inner coatings. Each of the jars has two outer coatings, one of which is connected to a small spark-gap by a short wire, while the other is connected to the same spark-gap by a wire about 1000 metres long. Hence on a spark passing between the knobs connected to the inside coatings, two sparks occur in the spark-gap, one produced by an electro-magnetic disturbance which has only traversed a few centimetres of wire, while the other, having started at the same time as the first, has passed along about 1000 metres of wire. An image of the sparks is thrown on to a photographic plate by a mirror rotating at a known speed. The speed of the mirror was determined by comparing, by means of a monochord, the pitch of the note produced by the vibrations of the axle in the bearings with the pitch of a tuning-fork. The "line" consisted of copper wires 3 millimetres in diameter, suspended on posts about 3 metres above the surface of the earth. The distance between each of the outgoing wires and the corresponding return, which was in the same vertical plane, was 80 cm., while the two circuits were at a distance of 40 cm. from each other. The mean of five sets of measurements gave 296,400 kilometres per second as the velocity of the disturbance, while three others in which the distance traversed was nearly twice as great, *i.e.* 1821 metres, gave 298,000 kilometres per second. The author considers that each individual measurement is probably correct to within 1 part in 100.

The *Annals* of the Astronomical Observatory of Harvard College, vol. xl. part iv., contain an important appendix by Mr. S. P. Fergusson, upon anemometer comparisons made at Mr. Rotch's Observatory at Blue Hill, Massachusetts, in the years 1892–94. The object of the investigation was to determine the mean differences between anemometers used as standards in different countries, and to compare the results of recent whirling-machine experiments. The observatory in question is admirably adapted for the purpose, being situated upon an isolated hill, and is equipped with the best patterns of anemometers, in addition to which some instruments were supplied from other places for comparison. The anemometers, and method of comparison are fully described; very useful results were obtained, to which, however, we can only briefly allude here. The experiments show conclusively that the smaller anemometers are the most sensitive to sudden variations in velocity, the ratio of sensitiveness being nearly proportional to the size, in instruments of the same type. The fan anemometers are much more sensitive than the cup anemometers, and are therefore the most efficient for recording gusty winds; the Robinson pattern instruments, mostly used in this country, are least efficient in this sense, but they possess undoubted advantages for recording mean velocities. Dines' pressure tube anemometer was found to be an excellent instrument, especially for indicating maximum velocities. The comparisons clearly show the need of some standard form of anemometer, to which all observations heretofore made can be reduced.

The results of much patient observation are recorded in *Bulletins* 129 and 130 of the Michigan Agricultural Experiment Station, which relate to fruit culture. Numerous varieties of fruits, embracing 156 of strawberries, 53 of raspberries, 30 of blackberries, 44 of currants and gooseberries, 63 of cherries, 191 of peaches, 72 of plums, 37 of pears, 101 of apples, besides quinces, apricots, nectarines, mulberries, and others, were separately grown. Cultural notes were periodically written, whilst quality, vigour, and productiveness were numerically estimated according to a fixed scale. In every case, the weight of an average specimen of the fruit is tabulated, the information thus conveyed being regarded as preferable to a record of the size, and at the same time more easily and accurately acquired. The difficulties of nomenclature and synonymy are somewhat lessened by a strict following of the rules of pomology, as formulated by the American Pomological Society and the National Division of Pomology, and every effort is made to avoid ambiguity. Notes on insects and other pests—such, for example, as the currant eelworm, *Nematus ventricosus*—are added wherever necessary, and the useful effects of sulphate of copper sprayed as an insectide are referred to. The *Bulletin* should be of great practical value to the cultivators of Michigan, a State the climate of which especially fits it for profitable fruit-growing.

MR. DAVID FLANERY, of Memphis, Tenn., U.S.A., writes that on January 14 last, "while looking for certain stars in the east at 5·45 a.m., suddenly a great light shone behind and to the left of me, and after studying a moment to determine whether it was a flash from the trolley, or some other common occurrence, I turned around to the west, and looking up beheld a body of grey nebulous matter, such apparently as the Milky Way is made up of, slowly disappearing from view. It lasted a full minute, and without moving in any direction faded away. I heard no noise as of an explosion, but the light and the apparent smoke which had the form J plainly indicated that an immense meteor had fallen or had been consumed. The locality of the phenomenon was on the borders of the Great Bear, Ursa Major, and the Little Lion, Leo Minor, and around the two bright stars Lambda and Mu, which mark the hind feet of the Bear."

THE phenomenal Eichener Lake in the Grand Duchy of Baden, which has the peculiarity of appearing and disappearing at uncertain periods, has recently again made its appearance after a lapse of time.

IT will be fifty years next October since the first application of ether in surgical operations took place; and in honour of this scientific jubilee, Prof. C. Binz, of Bonn, has recently published in Richard Fleischer's *Deutsche Revue* a valuable historical sketch of the successive stages through which that beneficial discovery has gone in various countries.

MESSRS. WILLIAM WESLEY AND SON have just issued a valuable catalogue (No. 125) of works on zoology. Scientific men and institutions on the look-out for standard zoological books and papers will find the catalogue well worth consultation.

THE Report of the Berlin branch of the German Meteorological Society for the current year contains, as usual, an interesting investigation into the climate of that city, by Prof. G. Hellmann, the Vice-President. The subject this year is the publication and discussion of the daily mean temperatures, and extreme values for the last forty-eight years.

THE additions to the Zoological Society's Gardens during the past week include an Egyptian Jerboa (*Dipus ægyptius*) from Algeria, presented by Mr. F. J. Pringner; a Polecat (*Mustela putorius*) from Worcestershire, presented by Mr. F. D. Lea Smith; an Alexandra Parrakeet (*Polytelis alexandræ*) from Australia, presented by Mr. W. Pritchard Morgan, M.P.; a Natal Python (*Python sebæ*, var. *natalensis*), five Hoary Snakes (*Coronella cana*), a Rhomb-marked Snake (*Psammophylax rhombeatus*), a Cape Bucephalus (*Bucephalus capensis*), five Puff Adders (*Vipera arietans*) from South Africa, presented by Mr. J. E. Matcham; a Brown Mouse Lemur (*Chirogaleus milii*) from Madagascar, three Red Kangaroos (*Macropus rufus*, ♂ ♂ ♀), four Black Wallaroos (*Macropus robustus*, 4 ♂), an Alexandra Parrakeet (*Polytelis alexandræ*) from Australia, a Hamadryad (*Ophiophagus elaps*) from India, deposited; two Common Sheldrakes (*Tadorna vulpanser*), European, purchased.

ERRATUM.—In Prof. J. J. Thomson's article on Röntgen rays, p. 582, col. 2, line 5, for 4×10^{-8} centimetres, read 4×10^{-6} centimetres.

OUR ASTRONOMICAL COLUMN.

THE SPECTRUM OF MIRA.—During the recent maximum of Mira Ceti, Prof. Wilsing was fortunate enough to obtain eleven photographs of the spectrum (*Sitz. Akad. Wiss.*, Berlin, March 26, 1896). The photographs are evidently very similar to those obtained by Prof. Pickering some years ago, hydrogen being represented by broad bright lines. The absence of the hydrogen line H_ϵ, which falls very near a broad line of calcium, is again very striking, and the simplest explanation of this fact is to suppose that the hydrogen light at that wave-length is absorbed by calcium vapour. This necessitates the supposition that there is a cooler layer of calcium outside the incandescent hydrogen, but the high atomic weight of calcium cautions us to regard this hypothesis as merely provisional. There is no certain evidence at present as to whether the hydrogen lines appear in the spectrum except about the time of maximum, and the Potsdam instruments are not of sufficient aperture to permit such an investigation to be made.

It is stated that there are no bright lines other than those of hydrogen, although there are parts of the spectrum (especially about wave-lengths 3894, 3906, and 4350) which give the impression of bright lines. The latter appearances are regarded simply as regions in which the continuous spectrum is thrown into relief by the absence of dark lines; similar effects, but not so marked, are said to be seen in the solar spectrum.

With the exception of the bright lines of hydrogen, the spectrum of Mira shows a nearly perfect agreement with that of the sun in the region more refrangible than $H\gamma$, while on the less refrangible side of this line the spectrum is characterised by dark flutings fading towards the red.

There is probably a slight displacement of the bright lines towards the less refrangible sides of their true positions, but the photographs are on too small a scale to permit any exact determination of the velocity in the line of sight. There is no suggestion of a doubling of the hydrogen lines such as is seen in the case of β Lyræ, but the occurrence of a strong dark line alongside $H\zeta$ reminds one of the appearance of this line in β Lyræ.

The paper concludes with a table of wave-lengths, extending from λ 3772 to λ 4755.

COMET SWIFT, 1896.—The comet observed by Swift on April 13 is a new one, and from its position on April 16, 19, and 20, Dr. R. Schorr has derived the following elements and ephemeris for Berlin midnight:—

$$T = 1896 \text{ April } 17.51 \text{ Berlin mean time.}$$

$$\left.\begin{array}{l}\omega = 1^\circ\ 12' \\ \Omega = 177^\circ\ 55' \\ i = 55^\circ\ 15'\end{array}\right\}\ 1896.0$$

$$\log q = 9.7515$$

	R.A.			Decl.			Brightness.
	h.	m.		°	′		
April 30 ...	3	1·8	...	+51	55	...	0·72
May 2 ...	2	51·3	...	+55	22	...	0·63

The unit of brightness is that on April 16. The comet will be very near to γ Persei on May 2.

This comet is now well placed for observation, and being circumpolar can be seen practically all night. Observations made at South Kensington by Mr. Shackleton, on the 28th inst., show that it is so bright that it can be seen with an opera-glass. The comet has a well-marked nucleus and a slight tail. Spectrum observations and measures made with a small 3-prism spectroscope, collimator 6-inch, showed three bright bands, but practically no continuous spectrum. Comparison was made with a spirit flame, and the carbon bands were seen to be identical with the bright bands of the comet, the one at λ 516 being especially bright.